Svizzero, Michael

From: Faison, George
Sent: Monday, January 27, 2014 8:58 AM
To: Svizzero, Michael
Subject: FW: Follow-up to our conversation on Tuesday
Attachments: Entsorga submission - 11-23-13.pdf

11/24 email

George Faison
U.S. Environmental Protection Agency
OSWER, ORCR
1200 Pennsylvania Avenue, NW
Mail Code 5303P
Washington, DC 20460

Phone - (703)305-7652
faison.george@epa.gov

From: Jonathan Birdsong [mailto:jbirdsong@bwstrategies.com]
Sent: Sunday, November 24, 2013 8:35 PM
To: Cozzie, David
Cc: Spells, Charlene; Johnson, Barnes; Faison, George; Armstead, John A.; Devlin, Betsy; Straus, Matt; Smidinger, Betsy; Young, Jessica; Baldwin, Mark; Dubey, Susmita
Subject: RE: Follow-up to our conversation on Tuesday

David -

Attached are Entsorga's updated answers to add clarity on both moisture content as well as sampling.

We appreciate your quick attention to this.

Jonathan

From: Cozzie, David [Cozzie.David@epa.gov]
Sent: Friday, November 22, 2013 5:08 PM
To: Jonathan Birdsong
Cc: Spells, Charlene; Johnson, Barnes; Faison, George; Armstead, John A.; Devlin, Betsy; Straus, Matt; Smidinger, Betsy; Young, Jessica; Baldwin, Mark; Dubey, Susmita
Subject: RE: Follow-up to our conversation on Tuesday

Jonathan,

Just wanted to check to see if you are going to make some minor revisions to the information to reflect these changes for our record purposes.

Thanks,

David

From: Jonathan Birdsong [mailto:jbirdsong@bwstrategies.com]
Sent: Thursday, November 21, 2013 8:57 PM
To: Cozzie, David
Cc: Spells, Charlene; Johnson, Barnes; Faison, George; Armstead, John A.; Devlin, Betsy; Straus, Matt; Smidinger, Betsy; Young, Jessica; Baldwin, Mark; Dubey, Susmita
Subject: Re: Follow-up to our conversation on Tuesday

David - thanks for your call tonight.

I checked with Entsorga tonight re: your questions to our answers last week. To clarify: yes we can meet 15% moisture content and yes the samples are tested prior to the entire batch being processed so we can make any necessary changes.

Thanks and I hope this helps!

Jonathan Birdsong
BlueWater Strategies, LLC
(202) 589-1757 - Direct
(202) 491-5559 - Cell

On Nov 6, 2013, at 4:21 PM, "Cozzie, David" <Cozzie.David@epa.gov> wrote:

> Jonathan,
>
> As discussed during our call on Tuesday, below are clarifications of the previously submitted questions to Entsorga by EPA:
>
> 1. EPA needs more information about the performance of the proposed NIR system to be used at the West Virginia plant. Is test data available that shows the effectiveness of the proposed NIR system at reducing the chlorine content of the waste which will be processed in West Virginia? *Clarification: Can Entsorga demonstrate/ensure that the chlorine content of the final product will be less than 0.3% and the sulfur content remains at or above a 1:1 stoichiometric ratio with chlorine when combusted?*
> 2. Can Entsorga regulate the moisture content *of the final product (not the materials exiting the biological treatment step)* to be held at 15% *or less,* consistently? What is the process to keep that consistency?
> 3. Please confirm the production frequency of the final product (daily or every x days). What are the measures to ensure consistency/homogeneity *of the final product* on a day-to-day and/*or* batch to batch basis? How does Entsorga intend to monitor *the moisture, ash and chlorine content and the chlorine to sulfur ratio of the final product*? The Monitoring and Analysis Plan submitted to EPA on 3/15/2013 appears to be a generic plan with weekly sampling frequencies and analysis frequencies ranging from weekly to four monthly.
>
> In addition, there were some additional clarifying questions raised on the rate of substitution for coal and the types of combustors that would use SRF for which you were seeking approval.
>
> Thanks,
>
> David Cozzie
> (919) 541-5356

EPA ADDITIONAL INFORMATION REQUIRED

As discussed during our call on Tuesday, below are clarifications of the previously submitted questions to Entsorga by EPA:

1. EPA needs more information about the performance of the proposed NIR system to be used at the West Virginia plant. Is test data available that shows the effectiveness of the proposed NIR system at reducing the chlorine content of the waste which will be processed in West Virginia? *Clarification: Can Entsorga demonstrate/ensure that the chlorine content of the final product will be less than 0.3% and the sulfur content remains at or above a 1:1 stoichiometric ratio with chlorine when combusted?*

- The concern about chlorine content refers to the potential formation of dioxin furan. The improvement in lowering chlorine content by using NIR is proven. As mentioned in our October 9, 2013 response, the commercial NIR technology we will use will detect and eject 99% by weight all non-black PVC materials from a waste stream. This technology is proven and in operation in over 15 states across the country including: California, Nevada, Colorado, Texas, Illinois, Georgia, Alabama, Utah, New Mexico, Oklahoma, Arkansas, Wisconsin, Ohio, North Carolina and Rhode Island. Data on the equipment's capabilities are attached. Additionally, most waste which contains chlorine comes from C&I waste. NIR can also detect material which contains chlorine from C&I waste, but that is not what we will be using at the Essroc facility. With the use of the NIR at the Entsorga facility, we can ensure that the final product will have less than a 0.3% chlorine content and the sulfur content will remain at or above a 1:1 stoichiometric ratio with chlorine when combusted.

  It is significant, and worth noting that under 40 CFR Part 63, Subpart LLL, cement manufacturing facilities are required to regularly monitor their facility's emissions to ensure that dioxin furan emissions are not created. Cement manufacturing facilities like Essroc would not be able to operate if dioxin furan emissions exceed this requirement, and Essroc would not consider Entsorga's SRF if there was a threat of violation. Regardless, cement manufacturing facilities not only regularly monitor their emissions, but the facility sets a maximum temperature at the inlet to the control device to curtail dioxin furan formation. In addition, the sulfur content in Entsorga's SRF (that will be used in Essroc's cement plant at a maximum 30% of their total fuel needs) combined with other fuels used by Essroc will make sure that the sulfur content remains at or above a 1:1 stoichiometric ratio with chlorine when combusted, further interfering with dioxin furan formation, and therefore further reducing the possible incidence of dioxin furan emissions. This was also found in an EPA report titled, "Mechanisms of Formation of Dioxin-like Compounds During Combustion of Organic Materials."

  The authors of that report observed that the principal action of sulfur in inhibiting the formation of CDDs/CDFs in combustion systems is through SO2 depletion of

Cl2, as follows:

$$Cl2 + SO2 + H2O \text{ à } 2HCl + SO2$$

The relevance of this finding is that the co-combustion with coal (that contains sulfur) should lead to dramatic reductions in the potential formation and emission of CDDs/CDFs.

2. Can Entsorga regulate the moisture content *of the final product (not the materials exiting the biological treatment step)* to be held at 15% *or less,* consistently? What is the process to keep that consistency?

- Yes, Entsorga can regulate the moisture content of the final product to be held at 15% consistently.

Additionally, the water content of the material exiting the biologic area is measured and kept uniform by continuous monitoring of the batches, as the water content of the material after biological treatment decreases further after its exposure to air. It is important to note that the highest moisture reduction is achieved by the natural process of biodrying that contributes to an overall weight loss of 25-30%. The monitoring process is detailed in our answer to question #3.

3. Please confirm the production frequency of the final product (daily or every x days). What are the measures to ensure consistency/homogeneity *of the final product* on a day-to-day and/*or* batch to batch basis? How does Entsorga intend to monitor *the moisture, ash and chlorine content and the chlorine to sulfur ratio of the final product*? The Monitoring and Analysis Plan submitted to EPA on 3/15/2013 appears to be a generic plan with weekly sampling frequencies and analysis frequencies ranging from weekly to four monthly.

- The plant we are considering to build in Martinsburg WV has a capacity of 100,000 t/y thus generating about 40,000 t/y equal to 180 t/day of Solid Recovered Fuel (SRF) that will produce 6 dd/w for roughly 12 hh/d.

For the purpose of SRF analysis the production batch is the weekly production 180 t/d *6 d =1080 t. In order to analyze the production batch 24 increments (4 increments a day) are taken over the week – prior to processing to ensure the system will operate within the regulated specifications. The increment size is about 1 kg and all increments will be mixed and homogenized to create the weekly composite sample. The composite sample, by quartering, will be selected a WEEKLY FINAL sample of 5-7kg (more or less 25 liters) to be analyzed by the laboratory. At that time all the items listed above: moisture, ash and chlorine content and the chlorine to sulfur ratio of the final product will be monitored. If there are issues, changes will be made to ensure consistency and that it meets EPA's desired regulations.